

II. Listing of the Claims

Applicants set forth below a complete listing of all of the claims of the application with the status of each claim noted parenthetically in accordance with 37 C.F.R. § 1.121. This listing of claims will replace all prior revisions and listings of claims in the application.

Claims 1-20. (canceled)

Claim 21. (previously presented) A method for grafting an unsaturated monomer onto a polysaccharide comprising the steps of: (1) forming a mixture comprised of an unsaturated monomer and a water soluble or water dispersible polysaccharide; (2) irradiating the mixture with an amount of electron beam radiation sufficient to form an unsaturated monomer-water soluble or water dispersible polysaccharide graft copolymer, wherein the graft copolymer is depolymerized to a molecular weight lower than the molecular weight of the ungrafted polysaccharide, and the polysaccharide in the copolymer has a molecular weight of no more than 700,000 Daltons .

Claim 22. (previously presented) The method of claim 21, wherein the unsaturated monomer is a vinyl monomer having a functional group.

Claim 23. (previously presented) The method of claim 21, wherein the polysaccharide is selected from the group consisting of guar, cationic guar, nonionic guar, locust bean gum, tara gum, amylose, amylopectin, xanthan and xanthan gum.

Claim 24. (previously presented) The method of claim 22, wherein the polysaccharide is guar.

Claim 25. (previously presented) The method of claim 22, wherein the polysaccharide is a cellulose containing at least one functional group.

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Claim 26. (previously presented) The method of claim 22, wherein the functional group is a carboxylate, a phosphonate, or a sulfonate group.

Claim 27. (previously presented) The method of claim 22, wherein the vinyl monomer is methacrylamidopropyltrimethylammonium chloride.

Claim 28. (previously presented) The method of claim 22, wherein the functional group is a quaternary ammonium group.

Claim 29. (previously presented) A grafted polymer comprising polysaccharide modified to have at least one unsaturated compound containing functional group chemically bound to said polysaccharide, said grafted polymer being dispersible in water and having a molecular weight lower than the molecular weight of the polysaccharide prior to said modification.

Claim 30. (previously presented) The grafted polymer of claim 29, wherein the polysaccharide is selected from the group consisting of cellulose containing at least one functional group, galactomannan and xanthan.

Claim 31. (previously presented) The grafted copolymer of claim 30, wherein the polysaccharide is a cellulose containing at least one functional group.

Claim 32. (previously presented) The grafted polymer of claim 29, wherein the unsaturated monomer is a vinyl monomer.

Claim 33. (previously presented) The grafted polymer of claim 32, wherein the vinyl monomer is selected from the group consisting of a carboxylated vinyl monomer, a sulfonated vinyl monomer, a phosphonated vinyl monomer and a quaternary ammonium vinyl monomer.

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Claim 34. (previously presented) The grafted polymer of claim 33, wherein the vinyl monomer contains a quaternary ammonium group.

Claim 35. (previously presented) The grafted polymer of claim 29, wherein the polysaccharide is selected from the group consisting of guar, cationic guar, nonionic guar, locust bean gum, tara gum, xanthan gum and amylose.

Claim 36. (previously presented) The grafted polymer of claim 29, wherein the polysaccharide is selected from the group consisting of guar and hydroxypropyl guar.

Claim 37. (previously presented) A cosmetic composition comprising the grafted polymer of claim 29.

Claim 38. (canceled)